

**DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES****DIRECTOR'S OFFICE****OCCUPATIONAL HEALTH STANDARDS**

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**PART 621. HEALTH HAZARD CONTROL FOR SPECIFIC EQUIPMENT AND OPERATIONS  
FOR CONSTRUCTION****Rule 6310 Health Hazard Control for Specific Equipment and Operations.**

(1) Temporary heating devices.

(a) Fresh air shall be supplied in sufficient quantities to maintain the health and safety of workmen. Where natural means of fresh air supply is inadequate, mechanical ventilation shall be provided. [1926.154 (a)(1)]

(b) When heaters are used in confined spaces, special care shall be taken to provide sufficient ventilation in order to ensure proper combustion, maintain the health and safety of workmen, and limit temperature rise in the area. [1926.154(a)(2)]

(2) Use of hand and power tools.

(a) General requirements.

(i) Condition of tools.

All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition. [1926.300(a)]

(ii) Personal protective equipment.

Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazard. All personal protective equipment shall meet the requirements and be maintained according to Rule 6501. [1926.300(c)]

(b) Fuel-powered tools.

When fuel-powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment, as outlined in Rules 6201 and 6501, shall apply. [1926.302(c)(2)]

(c) Powder-actuated tools.

When using powder-actuated tools, personal protective equipment shall be in accordance with Rule 6501. [1926.302(e)(4)]

(d) Use of woodworking tools.

When woodworking tools are used, all personal protective equipment provided for use shall conform to Rule 6501. [1926.304(e)]

(3) Ventilation and protection in welding, cutting, and heating.

(a) Gas welding and cutting - general. The applicable technical portions of American National Standards Institute, Z49.1-1967, Safety in Welding and Cutting, shall apply. [1926.350(j)]

(b) Mechanical ventilation. For purposes of this subsection, mechanical ventilation shall meet the following requirements: [1926.353(a)]

(i) Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems. [1926.353(a)(1)]

(ii) General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits, as defined in Part II of this chapter. [1926.353(a)(2)]

(iii) Local exhaust ventilation shall consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits as defined in Part II of this chapter. [1926.353(a)(3)]

(iv) Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air. [1926.353(a)(4)]

(v) All air replacing that withdrawn shall be clean and respirable. [1926.353(a)(5)]

(vi) Oxygen shall not be used for ventilation purposes, comfort cooling, blowing dust from clothing, or for cleaning the work area. [1926.353(a)(6)]

(c) Welding, cutting, and heating in confined spaces.

(i) Except as provided in subparagraph (c)(ii) of this subsection and subparagraph (d)(ii) of this subsection, either general mechanical or local exhaust ventilation meeting the requirements of paragraph (b) of this subsection shall be provided whenever welding, cutting, or heating is performed in a confined space. [1926.353(b)(1)]

(ii) When sufficient ventilation cannot be obtained without blocking the means of access, employees in the

confined space shall be protected by air-line respirators in accordance with the requirements of Rule 6501, and an employee on the outside of such a confined space shall be assigned to maintain communication with those working within it and to aid them in an emergency. [1926.353(b)(2)]

(d) Welding, cutting, or heating of metals of toxic significance.

(i) Welding, cutting, or heating in any enclosed spaces involving the metals specified in this subparagraph shall be performed with either general mechanical or local exhaust ventilation meeting the requirements of paragraph (b) of this subsection: [1926.353(c)(1)]

(A) Zinc-bearing base or filler metals or metals coated with zinc-bearing materials; [1926.353(c)(1)(i)]

(B) Lead base metals; [1926.353(c)(1)(ii)]

(C) Cadmium-bearing filler materials; [1926.353(c)(1)(iii)]

(D) Chromium-bearing metals or metals coated with chromium-bearing materials. [1926.353(c)(1)(iv)]

(ii) Welding, cutting, or heating in any enclosed spaces involving the metals specified in this subparagraph shall be performed with local exhaust ventilation in accordance with the requirements of paragraph (b) of this subsection, or employees shall be protected by air-line respirators in accordance with the requirements of Rule 6501: [1926.353(c)(2)]

(A) Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials; [1926.353(c)(2)(i)]

(B) Cadmium-bearing or cadmium-coated base metals; [1926.353(c)(2)(ii)];

(C) Metals coated with mercury-bearing metals; [1926.353(c)(2)(iii)]

(D) Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air-line respirators. [1926.353(c)(2)(iv)]

(iii) Employees performing such operations in the open air shall be protected by filter-type respirators in accordance with the requirements of Rule 6501, except that employees performing such operations on beryllium-containing base or filler metals shall be protected by air-line respirators in accordance with the requirements of Rule 6501. [1926.353(c)(3)]

(iv) Other employees exposed to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner. [1926.353(c)(4)]

(e) Inert-gas metal arc welding.

(i) Since the inert-gas metal arc welding process involves the production of ultraviolet radiation of intensities of 5 to 30 times that produced during shielded metal arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees shall not be permitted to engage in, or be exposed to, the process until the following special precautions have been taken: [1926.353(d)(1)]

(A) The use of chlorinated solvents shall be kept at

least 200 feet, unless shielded, from the exposed arc, and surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces. [1926.353(d)(1)(i)]

(B) Welders and other employees who are exposed to radiation shall be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks and openings, and free of highly reflective surfaces. [1926.353(d)(1)(iii)]

(C) When inert-gas metal arc welding is being performed on stainless steel, the requirements of paragraph (d)(ii) of this subsection shall be met to protect against dangerous concentrations of nitrogen dioxide. [1926.353(d)(1)(iv)]

(ii) Reserved.

(f) General welding, cutting, and heating.

Welding, cutting, and heating, not involving conditions or materials described in paragraph (c), (d), or (e) of this subsection, may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exists, suitable mechanical ventilation or respiratory protective equipment shall be provided. [1926.353(e)(1)]

(4) Welding, cutting, and heating in way of preservative coatings.

(a) Protection against toxic preservative coatings:

(i) In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by air-line respirators, meeting the requirements of Rule 6501. [1926.354 (c)(1)]

(ii) In the open air, employees shall be protected by a respirator, in accordance with requirements of Rule 6501. [1926.354(c)(2)]

(b) The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned. [1926.354(d)]

(5) Electrical equipment installation and maintenance.

(a) Applicability.

This subsection applies only to electrical installations used on the jobsite, both temporary and permanent. For power distribution and transmission lines, see the MIOSHA Construction Safety Standards. [1926.400(b)]

(b) Welding and cutting equipment.

Welding and cutting equipment shall meet the requirements specified in the MIOSHA Construction Safety Standards and subsections (1), (3) and (4) of this rule. [1926.402(e)]

(6) Battery rooms and battery charging.

(a) Batteries of the nonseal type shall be located in enclosures with outside vents or in well-ventilated rooms,

so arranged as to prevent the escape of fumes, gases, or electrolyte spray into other areas. [1926.403(a)(1)]

(b) Ventilation shall be provided to ensure diffusion of the gases from the battery to prevent the accumulation of an explosive mixture. [1926.403(a)(2)]

(c) Racks and trays shall be substantial and treated to be resistant to the electrolyte. [1926.403(a)(3)]

(d) Floors shall be of acid resistant construction or be protected from acid accumulations. [1926.403(a)(4)]

(e) Face shields, aprons, and rubber gloves shall be provided for workmen handling acids or batteries. [1926.403(a)(5)]

(f) Facilities for quick drenching of the eyes and body shall be provided within 25 feet of the work area for emergency use. [1926.403(a)(6)]

(g) Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries. [1926.403(a)(7)]

(h) Charging.

(i) Battery charging installations shall be located in areas designated for that purpose. [1926.403(b)(1)]

(ii) When charging batteries, the vent caps shall be kept in place to avoid electrolyte spray. Care shall be taken to assure that vent caps are functioning. [1926.403(b)(2)]

(7) Cranes and derricks.

Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres. [1926.550(a)(11)]

(8) Motor vehicles, mechanized equipment, and marine operations.

(a) Equipment. The use, care and charging of all batteries shall conform to the requirements of subsection (6) of this rule. [1926.600(a)(4)]

(b) Marine operations and equipment. First aid and lifesaving equipment. Provisions for rendering first aid and medical assistance shall be in accordance with Rule 6610. [1926.605(d)(1)]

(9) Excavations, trenching, and shoring.

(a) Definition applicable to this subsection.

"Excavation" means any manmade cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation. If installed forms or similar structures reduce the depth-to-width relationship, an excavation may become a trench. [1926.653(f)]

(b) General protection requirements. All employees shall be protected with personal protective equipment for the protection of the head, eyes, respiratory organs, hands, feet, and other parts of the body as set forth in Rule 6501. [1926.650(e)]

(c) Employees subjected to hazardous dusts, gases, fumes, mists, or atmospheres deficient in oxygen, shall be

protected with approved respiratory protection as set forth in Rules 6402 and 6501. [1926.650(g)]

(d) Specific excavation requirements.

(i) Upon completion of exploration and similar operations, temporary wells, pits, shafts, etc., shall be backfilled. Abandon wells shall be sealed in accordance with R 325.1666 of the General Water Quality Control Rules.

(ii) If possible, dust conditions shall be kept to a minimum by the use of water, salt, calcium chloride, oil, or other means. [1926.651(u)]

(iii) Hazardous atmospheres. See Rule 6402(2).

(10) Demolition.

(a) Preparatory operations.

It shall be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started. [1926.850(e)]

(b) Selective demolition by explosives.

Selective demolition by explosives shall be conducted in accordance with the applicable sections of the MIOSHA Construction Safety Standards.

(11) Power transmission and distribution.

(a) General.

(i) Application. The occupational health standards contained in this subsection shall apply to the construction of electric transmission and distribution lines and equipment. [1926.950(a)]

(A) As used in this subsection the term "construction" includes the erection of new electric transmission and distribution lines and equipment, and the alteration, conversion, and improvement of existing electric transmission and distribution lines and equipment. [1926.950(a)(1)]

(B) Existing electric transmission and distribution lines and electrical equipment need not be modified to conform to the requirements of applicable standards in this subsection, until such work as described in subdivision (A) of this subparagraph is to be performed on such lines or equipment. [1926.950(a)(2)]

(C) The standards set forth in this subsection provide minimum requirements for health. Employers may require adherence to additional standards which are not in conflict with the standards contained in this subsection. [1926.950(a)(3)]

(ii) Emergency procedures and first aid. The employer shall provide training or require that his employees are knowledgeable and proficient in: [1926.950(e)(1)]

(A) Procedures involving emergency situations, and [1926.950(e)(1)(i)]

(B) First aid fundamentals including resuscitation. [1926.950(e)(1)(ii)]

(C) In lieu of subdivision (ii) of this paragraph, the

employer may comply with the provisions of Rule 6610(3) regarding first aid requirements. [1926.950(e)(2)]

(b) Sanitation facilities. The requirements of Rule 6615 of this part shall be complied with for sanitation facilities. [1926.950(h)]

(12) Blasting and use of explosives.

(a) Explosives.

(i) Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion; that is, with substantially instantaneous release of gas and heat, unless such compound, mixture, or device is otherwise specifically classified by the United States Department of Transportation. [1926.914(n)(1)]

(ii) All material which is classified as Class A, Class B, and Class C explosives by the United States Department of Transportation. [1926.914(n)(2)]

(iii) Classification of explosives by the United States Department of, Transportation is as follows:

Class A explosives: Possessing detonating hazards, such as dynamite, nitroglycerin, picric acid, lead azide,

fulminate of mercury, black powder, blasting caps, and detonating primers.

Class B explosives: Possessing flammable hazard, such as propellant explosives, including some smokeless propellants.

Class C explosives: Including certain types of manufactured articles which contain Class A or Class B explosives, or both, as components, but in restricted quantities. [1926.914(n)(3)]

(b) The employer shall permit only authorized and qualified persons to use explosives. [1926.900(a)]

(c) Sufficient time shall be allowed, not less than 15 minutes in tunnels, for the smoke and fumes to leave the blasted area before returning to the shot. An inspection of the area and the surrounding rubble shall be made by the blaster to determine if all charges have been exploded before employees are allowed to return to the operation and in tunnels, after the muck pile has been wetted down. [1926.910(b)]